EPI-LOG

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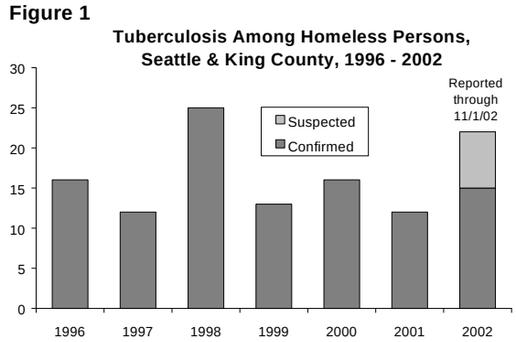
Recent Increase in Tuberculosis Among Homeless Persons in King County

Starting in the summer, and continuing into the fall of 2002, King County has experienced an increase in the number of homeless persons diagnosed with tuberculosis (TB). Molecular strain typing demonstrates that ongoing transmission is occurring. Health care providers serving persons with risk factors for TB, including homelessness, HIV infection, substance abuse, and Native American race, are advised to increase their vigilance in evaluating and treating patients for active TB and latent TB infection.

Twenty-two cases of tuberculosis have been diagnosed among homeless persons in King County during the first 10 months of 2002 (Figure 1). This is an increase compared to the 12–15 cases among homeless persons per year reported in 1996, 1997, 1999, 2000 and 2001. In 1998, King County experienced a similar increase in TB transmission which was associated with homelessness and HIV infection.[1] Of the current cases, 15 (68%) are culture confirmed, and the infections are sensitive to standard TB medications. The others are receiving curative therapy with cultures pending. Fourteen TB infections are pulmonary only, 1 is both pulmonary and extrapulmonary, and 7 are extrapulmonary only (6 of these are pleural, and 1 is peritoneal). Most of these cases (17/22) were diagnosed by primary care physicians or in emergency departments during evaluation of new or persistent illness. Diagnoses in the other five resulted from TB screening activities.

Figure 1



Almost all of these cases are male (20/22) and the mean age is 43 (range is 27 to 58). Three are White, 7 are Black, 3 are Latino, 1 is Asian/Pacific Islander, and 8 are Native American. Of the 22 cases, all have been tested for HIV infection and 7 are HIV-positive. Possible locations of TB transmission have been evaluated intensively. Six cases are associated with facilities for chronic public inebriates, 4 cases with service centers for Native Americans, 3 with other service centers for homeless persons, 3 with single room occupancy housing, and two with homeless shelters – all in or near downtown Seattle. TB Program staff have performed screening evaluations (tuberculin skin tests, symptom checks, and chest x-rays) for those with either a new positive skin test (≥ 5 mm induration at 48 to 72 hours) or TB symptoms. Screening evaluations have been performed at the time of each new diagnosis of pulmonary TB associated with each setting, and again three months later, since a tuberculin skin test can take up to ten weeks to convert to positive after exposure. Clients and staff newly found to have TB infection have been started on treatment by the TB Clinic and by clinicians in the community.

Five initial isolates of *M. tuberculosis* from 2002 homeless cases have had molecular strain typing. Four of these isolates are genotypically linked to a high degree of certainty, demonstrating a cluster of recent transmission.

Molecular strain typing is performed by restriction fragment length polymorphism (RFLP) and spoligotyping, which are internationally standardized methods of "fingerprinting" the DNA of *M. tuberculosis* strains. The results resemble bar codes that are specific, or nearly so, to individual strains. Multiple *M. tuberculosis* isolates represent the same strain when they exhibit identical patterns by both methods. Strain typing is performed locally by the Seattle Biomedical Research Institute (SBRI), a not-for-profit organization that conducts targeted research on global infectious diseases.

The TB Clinic is arranging strain typing for all culture-positive cases of TB diagnosed in King County since 2001. In addition to helping Public Health characterize TB transmission, strain typing can also assist in the evaluation of suspected false-positive cultures (positive cultures in low-risk persons) which can result from cross-contamination in the laboratory.

The TB Program is currently receiving consultation and logistical support for this investigation from the Washington State Department of Health (DOH) Tuberculosis Control Program, and from the Centers for Disease Control and Prevention (CDC) section of TB outbreak investigations. The DOH and CDC are also evaluating the King County experience in the context of increases in homeless and Native American TB cases in other jurisdictions. The TB program recently applied for, and was awarded a $300,000 CDC contract to measure the prevalence of TB infection in homeless persons with sophisticated epidemiological methods, to evaluate a new blood test for TB infection, and to evaluate current treatment of TB infection in this population.

King County medical care providers are reminded to consider tuberculosis in the evaluation of persons with persistent cough, fever, weight loss, and other persistent

undiagnosed symptoms, and to call the TB Clinic to report any newly suspected cases of tuberculosis. Current guidelines for targeted testing and treatment of latent TB infection can be found at: http://www.metrokc.gov/health/sts_svs/tbtargeted.htm. Any questions on these guidelines or on tuberculosis in general can be directed to the TB clinic at (206) 731-4579.

[1] Public Health-Seattle & King County. HIV–associated TB: Cluster in Seattle apartment building. Epi-Log 1998; 38 (10). Available from: URL: http://www.metrokc.gov/health/phnr/prot_res/epilog/vol3810.htm

Unusual Manifestations of *N. meningiditis* Infection

Case 1. On October 15th, 2002 a 37 year old male was admitted to a local hospital with a diagnosis of epiglottitis and atypical pneumonia. He reported a three day history of throat pain, inability to swallow, headache and fever. The patient was treated empirically with ceftriaxone. *Neisseria meningitidis* was identified on blood culture on October 19th, one day after discharge. The following Monday, hospital infection control staff reported the case to Public Health.

Case 2. On November 2, 2002 a 30 year old female was transported by ambulance to a local emergency department with a one day history of stiff neck. Blood cultures were obtained and the patient was diagnosed with pneumonia, treated with azithromycin, and discharged. *Neisseria meningitidis* was identified on blood culture on November 8th, the patient was readmitted on Nov. 10th, and Public Health was notified on Nov. 12th when an infectious disease consultant saw the patient.

Meningococcal epiglottitis and bacteremic pneumonia are uncommon and less readily recognized manifestations of *N. meningiditis* infection that make prompt administration of meningococcal chemoprophylaxis to exposed persons difficult**.** Because the incubation period for meningococcal infections ranges from 2 to 10 days (and is typically 3 to 4 days), it is critical that close contacts to a case are offered antibiotic prophylaxis as soon as possible. Prophylaxis of exposed hospital staff and other close contacts by the case's attending physician is appropriate, and should happen concurrently with notification to Public Health, because there may be additional candidates for antibiotic prophylaxis in the community. In addition, contacts of meningococcal disease cases at child care programs, schools, and workplaces frequently require counseling regarding meningococcal disease. Prompt reporting is also important to allow recognition of outbreaks if other cases of menigococcal disease in the community are occurring. Finally, Public Health routinely follows-up with close contacts, and reinforces the need to seek appropriate evaluation, and/or treatment if symptoms consistent with meningococcal infection occurs.

To report an immediately notifiable condition to Public Health, please call (206) 296-4774, day or night. After hours the call will go to the answering service and the Public Health Officer on call will be paged. For a list of conditions which are legally reportable in Washington State, go to: http://www.metrokc.gov/health/providers/., or contact Laurie Stewart, Epidemiology Surveillance Coordinator, at laurie.stewart@metrokc.gov or (206) 296-2735.

Pertussis Update

Public Health is currently investigating several ongoing outbreaks, and multiple sporadic cases of pertussis. Please consider pertussis in patients presenting with a cough illness of at least two weeks duration, accompanied by paroxysms of coughing, inspiratory "whoop", or post-tussive vomiting, without other apparent cause. Guidelines for pertussis diagnosis and treatment can be found at: http://www.metrokc.gov/health/immunization/providers.htm#pertussis, or call (206) 296-4774 to have the guidelines faxed or e-mailed.

Correction to October 2002 "Reported Cases of Selected Diseases" Table

The October 2002 "Table of Reported Cases of Selected Diseases", incorrectly included case numbers from August instead of September. The *Epilog* Online contains a corrected version of the table.

Disease Reporting
AIDS/HIV..... (206) 296-4645
STDs..... (206) 731-3954
TB ..... (206) 731-4579
Other Communicable Diseases ..... (206) 296-4774
Automated 24-hr reporting line for conditions not immediately notifiable..... (206) 296-4782

Hotlines:
Communicable Disease..... (206) 296-4949
HIV/STD..... (206) 205-STDS

***EPI-LOG* Online (including past issues):**
www.metrokc.gov/health/providers

Reported Cases of Selected Diseases, Seattle & King County 2002

	Cases Reported in October		Cases Reported Through October	
	2002	2001	2002	2001
AIDS	15	18	237	261
Campylobacteriosis	26	25	262	264
Cryptosporidiosis	5	6	21	22
Chlamydial infections	516	414	3695	3607
Enterohemorrhagic *E. coli* (non-O157)	0	1	0	4
***E. coli* O157: H7**	4	3	23	29
Giardiasis	14	25	151	132
Gonorrhea	136	156	1206	1337
***Haemophilus influenzae* (cases <6 years of age)**	0	0	0	0
Hepatitis A	0	2	28	20
Hepatitis B (acute)	2	0	27	28
Hepatitis B (chronic)	44	84	457	535
Hepatitis C (acute)	3	0	12	9
Hepatitis C (chronic, confirmed/probable)	93	111	1229	1191
Hepatitis C (chronic, possible)	30	46	393	455
Herpes, genital (primary)	56	68	556	600
Measles	0	0	0	12
Meningococcal Disease	1	1	16	9
Mumps	0	0	0	1
Pertussis	25	3	116	34
Rubella	0	0	2	0
Rubella, congenital	0	0	0	0
Salmonellosis	18	18	178	224
Shigellosis	11	14	61	97
Syphilis	5	4	36	47
Syphilis, congenital	0	0	0	0
Syphilis, late	3	1	31	36
Tuberculosis	14	8	129	103

The *Epi-Log* is available in alternate formats upon request.